

ABSTRACT OF THE DISCLOSURE

A calcium-enriched organic fertilizer for acid soil and/or a magnesium-enriched organic fertilizer for field products and/or a silica-enriched organic fertilizer for paddy field products, and its manufacturing method. The method includes elimination of saline matters harmful to the soil and plants/animals from organic waste including food waste, adding quick lime and/or dolomite for hydration, and introducing a drying exhaust gas having a high CO<sub>2</sub> content generated from the factory, an exhaust gas from a line calcining kiln, or an out sourced CO<sub>2</sub> gas into a heretically sealed mixer, aging tank and hydration tank in the reverse order to cause a carbonation reaction between CO<sub>2</sub> and the dissociated ions of the additives to make the organic waste in a weak alkaline state, and adding a siliceous material. The present invention is also directed to a functional organic plant nutrient for high-value garden plants or lawn in golf links and its manufacturing method enabling utilization of environmental contamination-causing organic waste including food waste as a weak alkaline fertilizer in an economical way.